



NOTICE OF ALLOWANCE AND FEE(S) DUE

24112 7590 08/08/2008

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EXAMINER
PANWALKAR, VINEETA S
ART UNIT PAPER NUMBER

2611
DATE MAILED: 08/08/2008

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.

10/736,122 12/15/2003 Ali S. Khayrallah 4015-5158 3589

TITLE OF INVENTION: METHOD FOR PATH SEARCHING AND VERIFICATION

Table with 7 columns: APPLN. TYPE, SMALL ENTITY, ISSUE FEE DUE, PUBLICATION FEE DUE, PREV. PAID ISSUE FEE, TOTAL FEE(S) DUE, DATE DUE

nonprovisional NO \$1440 \$300 \$0 \$1740 11/10/2008

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.



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Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
Row 1: 10/736,122, 12/15/2003, Ali S. Khayrallah, 4015-5158, 3589
Row 2: 24112, 7590, 08/08/2008, [EXAMINER: PANWALKAR, VINEETA S], [ART UNIT: 2611, PAPER NUMBER]

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)

(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 863 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 863 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability

Application No. 10/736,122	Applicant(s) KHAYRALLAH ET AL.	
Examiner VINEETA S. PANWALKAR	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

- 1. This communication is responsive to response filed 6/6/08.
- 2. The allowed claim(s) is/are 1, 3-27, 39-42, 44-58, 60-80, 88-92, 94-120 and 122-125.
- 3. Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some* c) None of the:
 - 1. Certified copies of the priority documents have been received.
 - 2. Certified copies of the priority documents have been received in Application No. _____ .
 - 3. Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

- 4. A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 - 5. CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) hereto or 2) to Paper No./Mail Date _____.
 - (b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
- 6. DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- 1. Notice of References Cited (PTO-892)
- 2. Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3. Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
- 4. Examiner's Comment Regarding Requirement for Deposit
of Biological Material
- 5. Notice of Informal Patent Application
- 6. Interview Summary (PTO-413),
Paper No./Mail Date _____ .
- 7. Examiner's Amendment/Comment
- 8. Examiner's Statement of Reasons for Allowance
- 9. Other _____.

DETAILED ACTION

Allowable Subject Matter

1. Claims 1, 3-27, 39-42, 44-58, 60-80, 88-92, 94-120 and 122-125 are allowed.

The following is an examiner's statement of reasons for allowance:

- 1a. Regarding claim 1, prior art of record fails to disclose a search method for identifying one or more candidate delays for a receiver comprising: generating a hierarchical delay tree for the received signal comprising a plurality of delay nodes in a lowermost level of the delay tree linked by branches and one or more linking nodes to a root node at the highest level of the delay tree, wherein each delay node is associated with one of the signal delays; searching through the delay tree to identify one or more surviving delay nodes; and selecting one or more surviving delay nodes as the candidate delays, in combination with each and every other limitation of the claim.
- 1b. Claims 3-27 are allowed as being dependent on claim 1.
- 1c. Regarding claim 39, prior art of record fails to disclose a method for selecting one or more finger delays for a RAKE receiver comprising generating a hierarchical delay tree comprising a plurality of delay nodes in a lowermost level of the delay tree linked by branches and one or more linking nodes to a root node at the highest level of the delay tree, wherein each delay node is associated with a signal delay; searching through the delay tree to identify one or more surviving

delay nodes; adding the candidate delays corresponding to the surviving delay nodes to a candidate pool; and selecting one or more finger delays for the RAKE receiver from the candidate pool, in combination with each and every other limitation of the claim.

- 1d. Claims 40-42 and 44-57 are allowed as being dependent on claim 39.
- 1e. Regarding claim 58, prior art of record fails to disclose a delay searcher for a receiver to search a received signal having a plurality of signal images corresponding to a plurality of signal delays for one or more candidate delays, the delay searcher comprising: a tree generator to generate a hierarchical delay tree comprising: a plurality of delay nodes in a lowermost level of the delay tree, wherein each delay node is associated with a signal delay; a root node at the highest level of the delay tree; one or more linking nodes disposed between the root node and the plurality of delay nodes; and branches that link the plurality of delay nodes to the root node via the linking nodes; and a tree searcher to search through the delay tree to identify one or more surviving delay nodes, wherein the one or more surviving delay nodes correspond to the one or more candidate delays.
- 1f. Claims 60-80 are allowed as being dependent on claim 58.
- 1g. Regarding claim 88, prior art of record fails to disclose a RAKE receiver in a wireless network comprising: a delay searcher to generate and search through a hierarchical delay tree based on delay nodes associated with the signal delays to identify one or more surviving delay nodes, wherein each surviving delay node

corresponds to a candidate delay; and wherein the RAKE receiver selects one or more RAKE finger delays from the candidate delays, in combination with each and every other limitation of the claim.

- 1h. Claims 89-92 and 94-118 are allowed as being dependent on claim 88.
- 1i. Regarding claim 119, prior art of record fails to disclose a circuit for processing a received signal having one or more signal images, each signal image having a corresponding signal delay, the circuit comprising search circuitry to generate and search through a hierarchical delay tree based on delay nodes associated with the signal delays to identify one or more surviving delay nodes, wherein each surviving delay node corresponds to a candidate delay.
- 1j. Claims 120 and 122-125 are allowed as being dependent on claim 119.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

- 2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VINEETA S. PANWALKAR whose telephone number is (571)272-8561. The examiner can normally be reached on M-F 8:30-

Art Unit: 2611

5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/V. S. P./
Examiner, Art Unit 2611

/Mohammad H Ghayour/
Supervisory Patent Examiner, Art Unit 2611